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HEALTH AND SAFETY



The Regional Municipality
of Hamilton Wentworth

REFERENCE HANDBOOK



The Corporation of
the City of Hamilton

*2nd Edition/July 1990
prepared by the
Health and Safety Section
Human Resources Department*

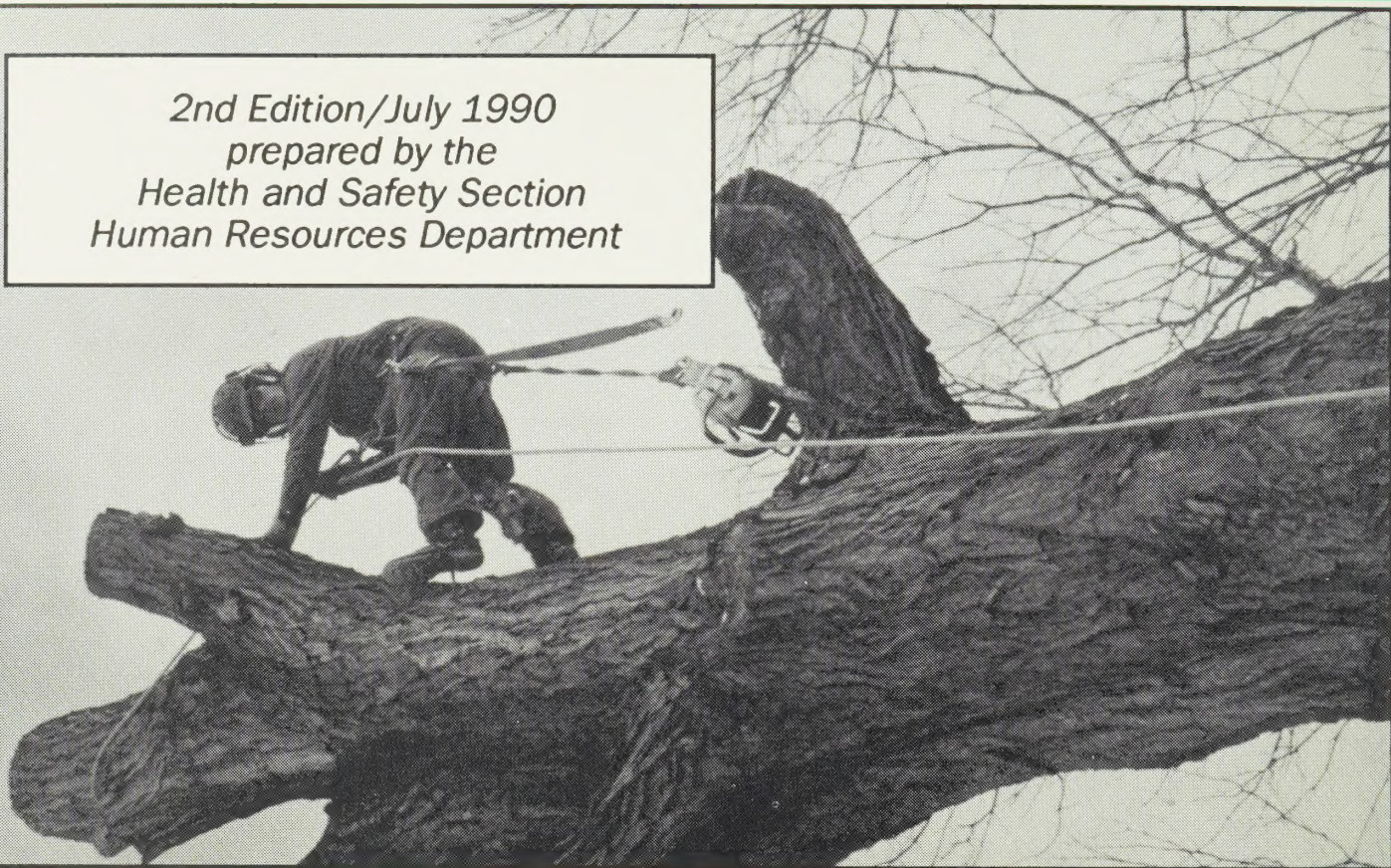


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INTRODUCTION



PURPOSE



It is the responsibility of each and every employee to help maintain a safe and healthy occupational environment. The employer in its various operations, has had occupational health and safety programs in place for many years. We are proud of our programs and performance has been at a high level. We can, however, still do better. THE PURPOSE OF THIS HANDBOOK IS TO PROVIDE BASIC INFORMATION ON YOUR PERSONAL RESPONSIBILITIES FOR SAFETY AND HEALTH. THERE IS ALSO VALUABLE INFORMATION ON THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS AND SERVICES IN HEALTH AND SAFETY WHICH ARE AVAILABLE THROUGH YOUR EMPLOYER.

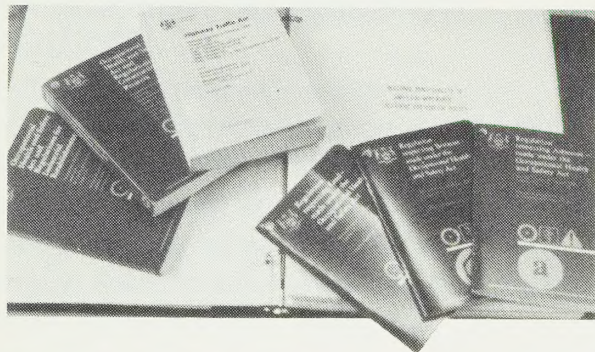
PURPOSE

You should read this handbook so that you understand your personal responsibilities, and to acquire basic safety principles which are very important in the safe performance of your job. Please keep this handbook easily accessible at all times. You will be using it often during safety contacts and/or safety meetings. This booklet will be updated as required and there are blank pages provided at the rear for notes and updates. **THIS HANDBOOK DOES NOT REPLACE ANY HEALTH AND SAFETY POLICY OR ANY OF THE RULES AND REGULATIONS AND JOB SAFE PRACTICES DEVELOPED IN VARIOUS DEPARTMENTS.**

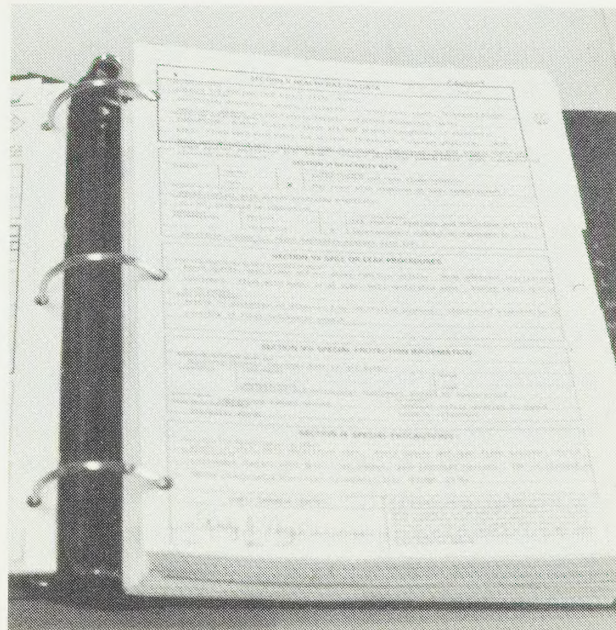
The handbook is a general overview of the Health and Safety Program and specific reference may be made to any of the following documents:

- Occupational Health and Safety Act and Regulations (Green books)
- Employer's Health and Safety Policy
- Traffic Control Manual
- Occupational Hygiene Programs
- Material Safety Data Sheets
- Highway Traffic Act
- various other legislation that may cover areas or procedures in your specific work processes.

PURPOSE



This information is either posted in conspicuous locations or is available upon request. Please consult your immediate Supervisor should you require any information. Your Health and Safety Committee Representative, Training Supervisor and Safety Officer may also be contacted for information.



POLICY STATEMENT

Health and Safety has been a major commitment of the employer for many years. This commitment is clearly defined on page 1 of the employer's Health and Safety Policy which reads as follows:

TO ALL EMPLOYEES:

ACCIDENT PREVENTION POLICY

The employer is committed to the safety of all employees. The employer has a responsibility for preventing occupational injuries and illnesses and this responsibility extends through all levels of the Organization.

POLICY STATEMENT

MANAGEMENT RESPONSIBILITY INCLUDES:

- 1) To ensure that safe working practices and procedures are established and followed by all employees.
- 2) To ensure that all employees receive the necessary training and knowledge to enable them to safely perform the work to which they have been assigned.

ALL EMPLOYEES have a personal responsibility to work safely and to contribute to the achievement of a high level of safety within the Organization.



RESPONSIBILITY AND ACCOUNTABILITY

DEFINITION OF RESPONSIBILITY

A responsibility is a duty or obligation which has been assigned to you by your Supervisor as a part of your job function.

The responsibility for health and safety lies with all employees at all levels.



DEFINITION OF ACCOUNTABILITY

Accountability is the control that converts your assigned responsibility into action.

If you are required to report that your responsibility has been carried out, you have been made accountable.

WHEN RESPONSIBILITY HAS BEEN ASSIGNED AND ACCOUNTABILITY IS IN PLACE, THEN SAFETY AND HEALTH PERFORMANCE WILL BE AT A HIGH LEVEL.

Your duties and responsibilities are further outlined in;

- O.H.S.A. and regulations.
- Available Department rules and regulations.
- Health and Safety Policy.

THESE ARE LISTED IN THIS BOOKLET FOR EASY REFERENCE.

SAFETY ORGANIZATION

It is the policy of the employer to perform all work in a safe way, consistent with good work practices and all current safety legislation. Responsibility for all Accident Prevention Programs is delegated to all levels of the organization. The chain of responsibility is as follows:

Senior Management

Managers/Directors/Superintendents

Supervisors

Employees

The Safety Officer's function is that of an advisor, resource person, administrator, trainer and educator in accident prevention to the entire organization.

These services are extended to all levels of management and to all employees in order to help them achieve their maximum safety responsibilities.

SENIOR MANAGEMENT RESPONSIBILITIES

A prime responsibility of Senior Management is to ensure that the Accident Prevention Policy is communicated to all levels of the organization and is properly enforced at all levels of the organization.

To regularly monitor the Accident Prevention Policy and make necessary changes and amendments as required to improve the policy.

SUPERINTENDENTS'/DIRECTORS'/MANAGERS' RESPONSIBILITIES

To ensure that safe working conditions and job practices, as required, prevail within their areas of responsibility.

SAFETY ORGANIZATION

IMMEDIATE SUPERVISORS' RESPONSIBILITIES

Immediate supervisors are the key safety persons within the organization as they deal directly with the workers. They are responsible for their crew and their work area. They will ensure that the workers perform their tasks safely under safe-working conditions.

EMPLOYEES' RESPONSIBILITIES

It is the responsibility of every employee to be aware of, and comply with, the Accident Prevention Policy of the employer and all applicable safety laws and regulations, and to take every reasonable precaution to protect themselves, their fellow employees and the public.



DUTIES

SENIOR MANAGEMENT DUTIES

To adopt and regularly revise specific safety objectives and standards consistent with safety legislation.

To monitor the accident prevention policy to ensure compliance with the policy and existing rules and regulations.

To hold all levels of the organization responsible and accountable for their safety performance.

To provide information, instruction and assistance to all supervisory staff in order to assist them in their duties to ensure the health and safety of their employees.

To understand and enforce the Accident Prevention Policy as well as the Occupational Health and Safety Legislation.

To ensure that the proper tools, equipment and personal protective devices which may be required to perform jobs safely are provided, and to ensure that these are maintained in good condition.

To provide ongoing safety training programs as required.

To participate in Safety Committee meetings as outlined by the Safety Committee structure and to consult with the Safety Officer on a regular basis to ensure proper monitoring of the program.

SUPERINTENDENTS'/MANAGERS'/DIRECTORS' DUTIES

This level of Management must maintain safety as a high priority in all planning and organizational functions.

DUTIES

They must be familiar with the conditions and regulations of all applicable safety legislation and to ensure that the requirements therein are followed.

They must ensure their employees protection and safety. They must ensure that safety policies and procedures are enforced and that no person is permitted to do work without proper training and instruction and adequate supervision.

This level of Management will become aware of any accident within their areas of responsibility and ensure that all necessary accident investigation forms are thoroughly and accurately completed by the immediate supervisor in charge and submitted to the Human Resources Centre within 24 hours.

IMMEDIATE SUPERVISORS' DUTIES

Immediate Supervisors, as key people, are responsible for the overall safety of their employees.

They must ensure that each worker is fully aware of the employer's Safety Policy and Rules and Regulations for any specific hazardous operations within their area of responsibility.

They must be familiar with conditions and regulations of all applicable safety legislation and ensure that the requirements therein are followed.

They must ensure that no employee is allowed to do work without proper training, instruction and adequate supervision.

They must rectify any unsafe condition or act immediately. If unable to do so, they must report it to their Superior immediately.

DUTIES

They must fully investigate and file a report on all injuries within their area and submit the report, approved by their superior, to the Human Resources Centre within 24 hours of occurrence. This report shall contain recommendations as to the prevention of a recurrence of a similar incident.

They must ensure the transportation of injured workers to the nearest medical facility, if required, and must acquire an initial medical report on the injured employee for investigative purposes as soon as possible.

They shall carry out regular safety inspections of their areas, over and above the regular Safety Committee inspections, and initiate corrective action where required to ensure a safe and healthy work environment.



EMPLOYEES' DUTIES

All employees, at all levels of the Organization have a personal responsibility to work safely and shall carry out their assigned duties with such skill and care as to

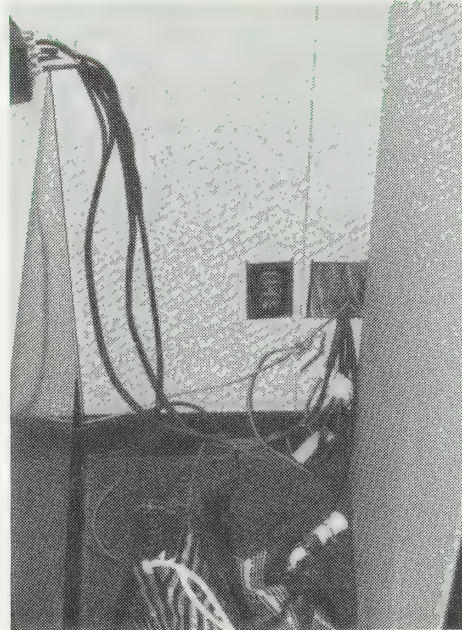
DUTIES

eliminate, as far as practicable, an accidental injury to themselves, to their fellow employees, and members of the public.

Employees shall promptly report any safety hazards or abnormal conditions to their immediate supervisor.

Employees must realize that the employer is concerned with their physical health and safety and that this policy is established with this goal in mind.

Employees must report all accidents or injuries, however small, to their immediate Supervisor immediately.

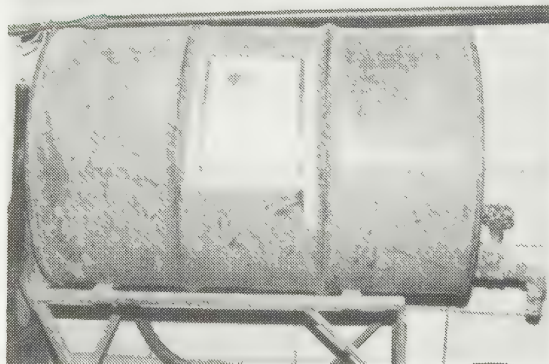


OCCUPATIONAL ENVIRONMENT

The employer has had a comprehensive health and safety program for many years. Performance under this program is the responsibility of line Management and employees. The responsibility for the co-ordination of the programs rest with the Safety Officer. The Safety Officer also provides valuable information on all safety related matters which may be of interest and benefit and which aid all parties in the discharge of their health and safety responsibilities.

Most Departments have joint labour-management health and safety Committees, and at least one Management Representative who has been given the responsibility to co-ordinate health and safety programs, including training, at the local departmental level.

The following is a list of health and safety related services provided and the areas to contact if these services are required.



OCCUPATIONAL ENVIRONMENT

Safety co-ordination at industrial
and construction sites

Fire prevention and protection

Maintenance and repair of breathing
apparatus, other safety equipment

Development and assessment of new
safety and health programs, procedures,
systems

Co-ordination of health and safety records

-- Management Representative
(immediate supervisor)

-- Local fire emergency warden
(if designated)

-- Management representative
(immediate supervisor)

-- Management Representative
(immediate supervisor)

-- Health and Safety Committees
-- Safety Officer

-- Local Medical Officer (if designated)
-- applicable clinics and medical
facilities (if designated)
-- Human Resources Centre

Occupational health and safety training

- training co-ordinator (if designated)
- Management representative (immediate supervisor)

Workers' Compensation Services

- Human Resources Centre

Occupational Hygiene Studies
and Surveys

- Safety Officer
- Occupational Therapist

Government liaison and interpretation
of government requirements

- Safety Officer

Preparation and distribution of standards,
information and training services

- Local training co-ordinator (if designated)
- Safety Officer

**More information on these and other
related services is available from
your Safety Officer.**



SAFETY PROGRAM



SOME BASIC SAFETY PRINCIPLES

ACCIDENTS

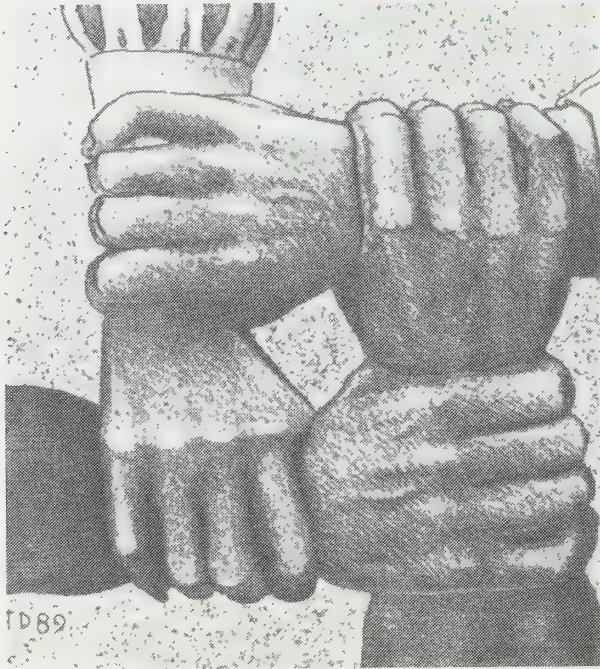
- An accident is an unplanned event.
- An accident and an injury are not the same.
- Accidents must be investigated to prevent future injury or damage.
- All injuries can be prevented.



ACCIDENT CAUSES

- Accidents are caused by unsafe acts or unsafe conditions.
- Accidents are not caused by carelessness or accident prone people.
- Both unsafe acts and unsafe conditions are caused by people not doing something they should or by doing something they should not.
- All unsafe acts are not the fault of the employees. An unsafe act can be due to poor training by Supervision, poor procedures or the failure to provide a safe alternative.
- All unsafe conditions are not the fault of supervision. Employees can fail to report workplace hazards or fail to replace guards.

SAFETY PROGRAM MODULES



The employer's Health and Safety Program is composed of many modules. Each of these modules is complete in itself, but only together do they form a total program designed to maintain a safe, and healthy occupational environment.

The modules are continuously undergoing review, modification and change and some of the main components are as follows:

- New employee introduction to health and safety by Supervision
- Supervisory and employee training
- Monthly health and safety meetings between employees and their supervisors
- Posters, films and publications
- Job assessments

SAFETY PROGRAM MODULES

- Personal protective equipment issue
- Job site monitoring
- Health and Safety Committees and regular committee meetings and inspections
- Accident investigation, analysis and response
- Health and safety policy binders
- Special safety awareness quizzes, calendars, pay cheque messages, contests, roadeos

The Safety Officer offers assistance and input to Supervision and employees with their safety responsibilities.

This input may be in the form of:

- Helping implement a specific program
- Assisting in setting standards for performance
- Advising and making recommendations
- Supplying data on safety questions
- Assisting with Ministry of Labour related issues and inspections
- Highlighting potential or actual hazards

THE NEW EMPLOYEE



When a new employee is hired by the Human Resources Centre the employee receives a copy of the employer's Health and Safety Policy and job related health and safety information. The employee is then directed to the Department where:

- 1) Basic safety equipment is issued
- 2) Introduction to immediate Supervisor
- 3) Introduction to Safety Committee Representative
- 4) General tour of the Department
- 5) Review of known hazards and available programmes

The information given in this introduction meeting is intended to provide the new employee with an indication of what can be expected in the Department where the new employee will be working. It also reviews programmes available which may effect the employee's health and safety.

JOB TRAINING

Your immediate Supervisor has the responsibility to see that you are trained in your job. You may be trained by the Supervisor, Training Supervisor, or an experienced fellow employee. Training is required whenever there is an employee involved in a new Department, a new job, or a new procedure.

Safety Training is part of good job training, it should never be an "ADD-ON".

Training will include:

- Explaining how the work is to be done safely
- Showing how to work safely
- Watching you do the job
- Correcting and retraining when necessary

As an employee you have a responsibility to follow safe procedures and not to take shortcuts.

If you think you know a better or faster way to do the job, discuss it with your immediate Supervisor first before trying it or submit a suggestion through an available suggestion program. If in doubt, ask your immediate Supervisor - it is your right and your responsibility. Specialized Training is provided through an ongoing cyclical training program provided by your Training Supervisor. This training may include such specialized areas as St. John Ambulance First Aid, self-contained breathing apparatus, defensive driving, confined space entry procedures and any other training which may be required to address potential hazards encountered in your work.

SAFETY COMMITTEES

The employer has several Health and Safety Committees or Health and Safety Representatives in place to make recommendations regarding the health and safety of employees and the workplace. These Committees:

- Inspect the workplace regularly
- Meet regularly
- Produce minutes of their workplace inspections and meetings which are distributed and posted for information
- Make recommendations
- Investigate serious injury causing accidents

The Committees provide a valuable service to employees and to the employer. Consult your Supervisor for specific information on committee functions and



inspection procedures and consult posted notices with names and departments of your safety committee members.

PLEASE BRING ALL SAFETY RELATED CONCERNS TO THE ATTENTION OF YOUR IMMEDIATE SUPERVISOR.

SAFETY MEETINGS

- Whenever it is possible, employees should attend monthly safety meetings during work hours.
- These meetings provide an opportunity for immediate Supervisors to convey information to employees on new practices or procedures.
- There is also a chance to discuss accidents or better ways to do jobs in the department.
- You should use the safety meeting to discuss issues and recommend solutions.
- Everyone at the meeting has a responsibility to get involved and help keep the workplace safe and healthful.
- The Supervisor has a responsibility to document minutes of the meeting, follow-up on concerns raised and report back on action taken.

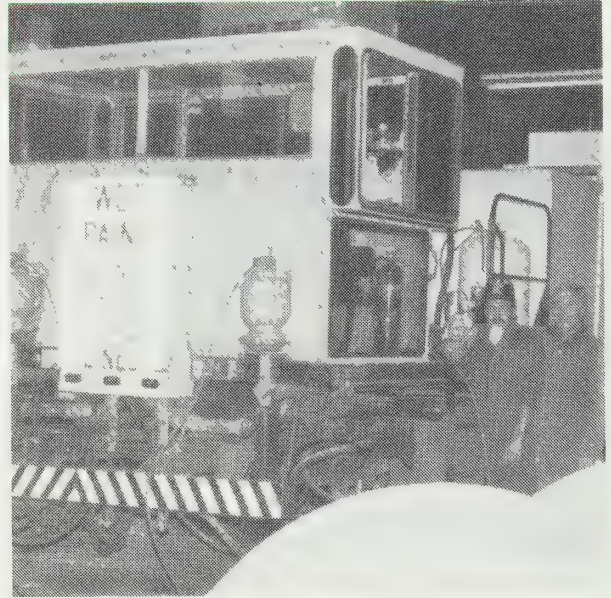
- Although monthly safety meetings are a useful way to exchange information, they are not the primary way.
- Personal contacts, job training and other discussions with your immediate Supervisor should all be used to best advantage.



SAFETY OF THE WORKPLACE

Every employee has the right to work in an environment that is as safe and healthful as possible. With this right you also have the responsibility to maintain the workplace in this safe and healthful condition.

Every day you should do a thorough check of your immediate work area and the tools or equipment you will be using on the job. Any defect or problem you notice should immediately be reported to your immediate Supervisor, who will see that it is corrected. If possible, you should correct it yourself, if it can be done without danger. By catching problems early, we can avoid any further damage or possible injury from occurring as a result.



SAFETY OF THE WORKPLACE

Your immediate Supervisor will also be doing routine inspections.

You should look for things such as:

- machine guarding - is it in place and in good condition?
- tools - are they adequate for the job and in good condition?
- ventilation - are there unusual levels of dust or fumes in the air?
- material storage - are materials piled correctly and safely?
- lighting - is it adequate for the job required?
- trip hazards - are there any which could be corrected?
- fire fighting equipment - is it easily accessible, identified and operational?

- mobile equipment - is it checked regularly to see that it is in good operating condition?



ACCIDENT REPORTING

All accidents must be reported immediately to your immediate supervisor. Prompt reporting is essential if potential hazards are to be recognized and corrected.

- Every accident should be reported. It does not matter if the accident did not involve any damage or injury - it is still considered an accident and therefore must be reported.
- Reporting of an accident can bring to light a hazard which had previously gone undetected and unrecognized, i.e. slip hazard, missing guard. Once identified, it can often be quickly corrected.
- Reported accidents become part of accident statistics. Review of these statistics can often point out areas of concern that may not normally be seen. For example, if statistics in one particular area show a high incidence of

cuts or abrasions to fingers this could point out the need for review of personal protective equipment.

- If you know of, or are involved in an accident, report it to your immediate supervisor who will fill out the appropriate form with you.
- If you have an accident with injury, report it to your immediate supervisor who can help you get treatment immediately. He/she will then ask you to help investigate the accident.



ACCIDENT INVESTIGATIONS

Once an accident is reported, the accident can be investigated to determine the cause or causes. This is to prevent a similar accident from happening again. An accident is an unplanned event usually caused by an unsafe act or an unsafe condition or a combination of the two. It can result in:

- no injury
- no damage
- damage
- injury
- damage and injury



Accidents represent problems in the performance of the Safety Program. By determining how and why the accident occurred, these problems can be eliminated and future accidents can be prevented.

As soon as possible after the accident, all people involved at the time of the accident should be interviewed by the immediate Supervisor. All employees are asked to give their version of what happened. Through these statements the cause or causes of the accident will be determined. As a result of employee input supplied, recommendations are made that will prevent an accident recurrence. **THE INTENT IS NOT TO PLACE BLAME!**

ACCIDENT INVESTIGATIONS

You may be closer to the jobs in the field than your Supervisor. If an accident occurs, the cause of that accident may be more obvious to you. Since you work there on a day-to-day basis, any input or recommendation you may have may be valuable in preventing future accidents.

Supervisors conducting investigations may be required to complete any one of several forms available. "Report of Accidental Injury, Industrial Disease or related unusual occurrence reports" and "Vehicle Accident Reports" are the most frequently required.



PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment is worn to protect you from possible hazards in the workplace. In many cases, the protective equipment was introduced because of a recommendation made as a result of an investigation into a previous accident. Efforts are made to control or contain most hazards at their source - but sometimes this is not enough. Your protective equipment is there to protect you from the additional and often unexpected hazards as well. Wearing all the equipment required may feel awkward or uncomfortable at first, but eventually it will become second nature.

REMEMBER - YOU'RE WEARING IT FOR YOUR PROTECTION.

EQUIPMENT REQUIRED

Requirements for equipment vary from area to area. Standard equipment usually includes hard hat, safety glasses and safety boots. There are different models available for your convenience and comfort.



PERSONAL PROTECTIVE EQUIPMENT

Other equipment could include:

- goggles - welders/mono
- hearing protection - ear plugs/muffs
- face shields - respirators
- gloves
- aprons
- leggings/spats
- specialized equipment

For the specific requirements in your area, ask your immediate Supervisor. You will be provided with detailed information on the equipment you will need and where you can obtain it.

TRAINING IN PERSONAL PROTECTIVE EQUIPMENT

Your Supervisor or Training Supervisor will also train you on how to wear the

equipment properly. During your training you will be told:

- How each piece of equipment must be worn.
- How to maintain and clean the equipment.
- How long the equipment is expected to last - at what stage of wear it should be replaced.

MAINTENANCE OF PERSONAL PROTECTIVE EQUIPMENT

Your personal protective equipment should be inspected on a regular basis to ensure it is in good condition and will provide you with the protection required. If the equipment is not in good condition, i.e. worn or broken, have it replaced immediately by your immediate supervisor.

PERSONAL PROTECTIVE EQUIPMENT

EMPLOYEE INPUT IN PERSONAL PROTECTIVE EQUIPMENT

The equipment you wear has been tested and evaluated as the best available for the type of work you are doing. However, your input is essential in bringing about the improvement of the equipment you wear.

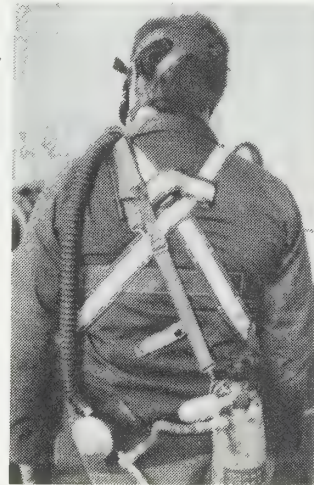
If you think the equipment is inadequate or unsuitable report it to your immediate supervisor.

If you have a suggestion to improve the equipment you're wearing report it to your immediate supervisor.

If you think a different type of equipment would give you better protection report it to your immediate supervisor.

You are the one who is going to wear the equipment; you know best when improvements need to be made.

If you find the equipment you have doesn't fit properly, talk to your immediate supervisor. In some cases, adjustments may have to be made to accommodate your particular needs. Sometimes, custom fitting may be required.



VEHICLES



Each year a number of employees are involved in a number of accidents that involve vehicles. For this reason, each one of us must take the responsibility not only for our own safety, but for the safety of our fellow employees and the public.



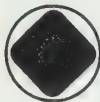
Only trained and authorized drivers should operate any of our vehicles. Drivers should keep their vehicles under control at all times.

When operating any vehicle, face the direction in which you are travelling and

VEHICLES

Signal personnel should

- stand in full view of the operator
- communicate with the operator by the signals shown on this card
- have a full view of the intended path of travel
- keep clear of the intended path of travel.



Construction Safety Association of Ontario
74 Victoria Street, Toronto, Ontario M5C 2A5
Telephone (416) 366-1501

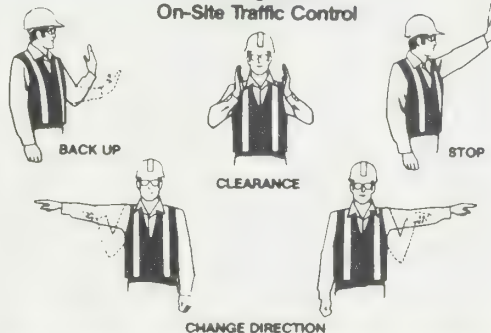
V6

satisfy yourself that you have good visibility.

You must be able to see in front, back and on both sides and be able to notice any hazard or pedestrians in your path.

Specific reversing procedures are

Hand Signals for
On-Site Traffic Control



required when line of sight is restricted.

Vehicles must be checked regularly (daily vehicle circle check).

Any problems should be reported and corrected before the vehicle is operated.

VEHICLES



Loads should be securely fastened before any vehicle is moved.

When driving on our own property, you must observe all speed limits just as you would on city streets.

While there are many precautions that



operators of vehicles must take for their safety, pedestrians also must take precautions.

Check aiseways for traffic before stepping out.

Observe all signs and warnings in traffic areas.

VEHICLES



Always use access doors, not truck doors, when entering or leaving a building. For information on vehicle safety, ask your immediate supervisor or your training supervisor.

The employer uses various types of vehicles and vehicular equipment for its various operations. Please consult with your immediate supervisor regarding available training for the vehicles you are required to operate in your work.

PROCEDURES (SPECIFIC)

CRANES

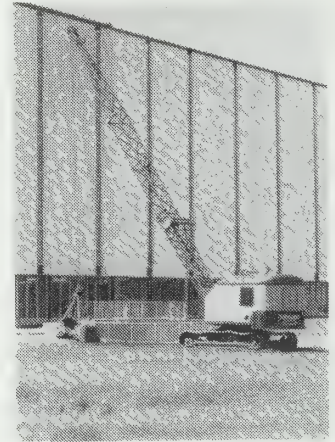
Injuries and damage can be avoided when working with cranes, if logical precautions are observed.

CRANE OPERATORS

- The crane operator must be a competent person, trained and knowledgeable in all aspects of the crane's operation. This includes being aware of the lifting capacity of the crane. Excess loads or side pulls could result in injury to both the operator and the employees working below.
- The physical condition of the cranes and cables must be checked regularly for wear. If you detect anything out of the ordinary, contact your immediate supervisor and have the condition corrected.

PEOPLE BELOW

- When loading material to be lifted, check that the load is balanced and secure before signalling for the lift to begin. An improperly secured load could fall or shift, causing damage to the crane and injury to the employees involved.

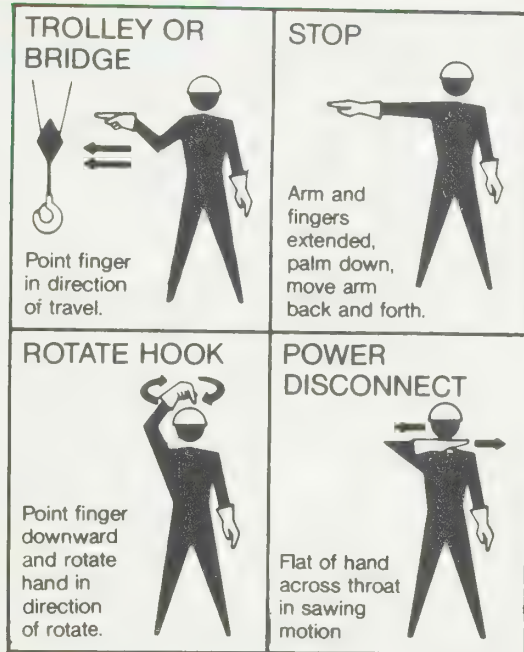
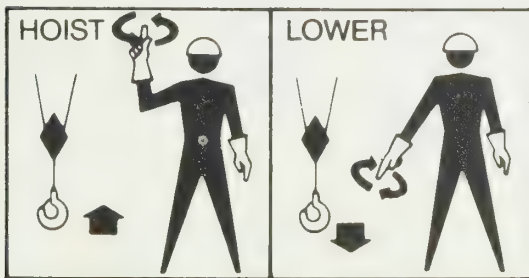


PROCEDURES (SPECIFIC)

- You should never attempt to stand on or ride on the load when a lift is in progress.
- When working in the vicinity, do not stand or walk under a lift.
- When signalling a crane operator, follow the standard crane signals for overhead lifts.


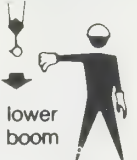

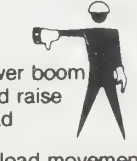

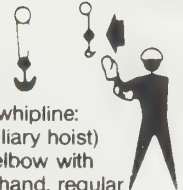
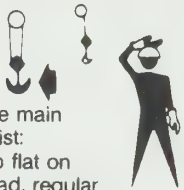


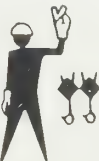

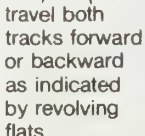

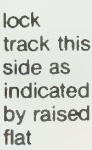
OVERHEAD CRANE SIGNALS

- Use standard crane signals.
- Misunderstanding and accidents can be avoided by following standard practice.







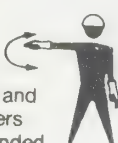




PROCEDURES (SPECIFIC)

MOBILE CRANE SIGNALS

<p>BOOM SIGNALS</p>  <p>raise boom</p>  <p>lower boom</p>  <p>raise boom and lower load</p>  <p>lower boom and raise load</p> <p>flex fingers during load movement</p>	<p>MAGNET DISCONNECTED</p>  <p>palms up</p>	<p>SELECTING SINGLE OR REEVED LINES MULTIPLE</p>  <p>use whipline: (auxiliary hoist) tap elbow with one hand, regular signals follow</p>  <p>use main hoist: tap flat on head, regular signals follow</p>
<p>TELESCOPING BOOMS</p>  <p>extended boom</p>  <p>shorten boom</p>	<p>MULTIPLE TROLLEYS</p> <p>one finger for block marked 1</p> <p>two fingers for block marked 2</p> <p>regular signals follow</p> 	<p>CRAWLER SIGNALS</p>  <p>turn</p>  <p>travel both tracks forward or backward as indicated by revolving flats</p>  <p>travel track this side in direction indicated by revolving flat</p>  <p>lock track this side as indicated by raised flat</p>

PROCEDURES (SPECIFIC)

MOBILE CRANE SIGNALS

HOIST 	LOWER 	MOVE SLOWLY  Use motionless hand with regular signal, example: lower load slowly	STOP  arm and fingers extended palm down	EMERGENCY STOP  arm and fingers extended, palm down, move arm rapidly back and forth
DOG EVERYTHING  clasp hands	TRAVEL 	TROLLEY TRAVEL 	SWING  point finger in direction of swing of boom	

PROCEDURES (SPECIFIC)

LOCKOUTS



Lockouts protect an employee from danger from any energy source or possible movement while working on a piece of machinery or equipment. The lockout should render the power source or

machine incapable of being switched on by another person.

- When working on any piece of equipment or machinery, you must lockout any part of it that is capable of being put into motion.
- Always release any stored energy from the system (air, water, hydraulics, etc.).
- Attach your own personal lock, and as many additional locks as may be required until you are satisfied the equipment is secure from danger. Prior to working on the equipment, test the controls to make sure that it is safe and the source of power or motion has been disconnected.
- If affixing a lock is not feasible, red danger tags should be used, tied firmly to the equipment. These indicate danger and should be treated as if they

LOCKOUTS (SPECIFIC)

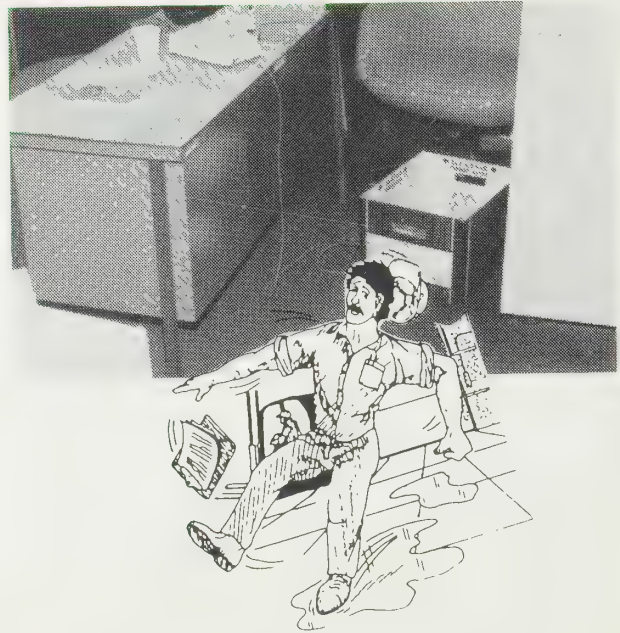
were a lock. Report these to your immediate supervisor as soon as possible. Your supervisor will arrange to have the equipment made lockable.

- A lock must only be removed by the person who placed it there. This should be done only when the work is completed and the safety of the employee is no longer at risk.
- If another employee or your supervisor has attached their lock to the piece of machinery or equipment you are working on, you have the right and are required to apply your own lock as well.
- At a shift change, you should remove your lock only when the employee relieving you is present to replace it with his/her lock, or if an appropriate departmental locking system is in place.

- Occasionally, the lock must be removed when the owner of the lock is not on site. Should a situation like this arise, contact your immediate supervisor to obtain the necessary approvals for removing the lock.
- The situation may arise where you have finished your part of the work yet the equipment or machine could still pose a risk to another employee. In this case, it is your responsibility to take the necessary precautions to identify the site as a possible hazard. You should notify your immediate supervisor to make the necessary arrangements.
- Locks are issued to each employee who requires them. Each lock is individually keyed and only one key issued per lock.

PROCEDURES (SPECIFIC)

- The above indicates the general requirements for a lock out system. Individual departments may develop specific lock out systems to best suit the work procedures followed in that department.
- More details on lockouts are available from your immediate supervisor.



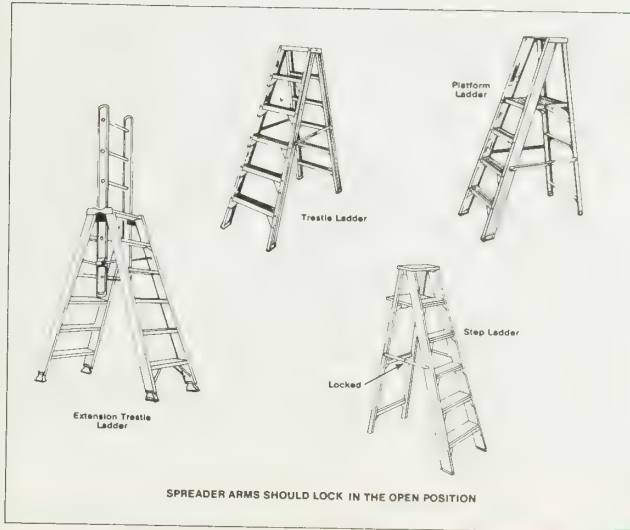
FALLS

Falls are a major source of serious injury. Proper awareness of hazards and taking appropriate precautions can prevent falls from occurring.

PROCEDURES (SPECIFIC)

LADDERS

- There are various types of ladders; everything from a step ladder to an extension ladder to vertical ladders.



- Each of these ladders has a different use and a different method of climbing.
- Some require protective devices while others do not.
- Ladders are made of many various materials. The type of work being done should be considered when choosing the correct ladder for the job. Check with your immediate supervisor for the type of equipment and proper precautions to be taken in your area. When climbing any type of ladder, you should:
- Check that the ladder is in good condition.
- Ensure your boots are clean and clear of any material that could cause you to slip.
- Maintain a firm hand grip when moving up and down. (Three point contact)

PROCEDURES (SPECIFIC)

OTHER TYPES OF FALLS

We often think about falls as involving heights, however, this is not always the case. Other hazards which can cause falls include:

- trip hazards, i.e. objects in walkways.
- electrical cords or cables.
- spills on floors.
- uneven surfaces.

Good housekeeping and workplace inspections should help get these hazards cleared up quickly.

MACHINE GUARDING

Injuries resulting from employees being caught in machinery can be very serious. For this reason, machine guards are designed to protect employees from contact with moving machinery parts.

Guards are required on all machines where moving parts or possible pinch points are exposed.

Before using a piece of equipment, check it to see that the guards are in place and in good condition. If there is a problem or defect, it should be reported immediately to your immediate supervisor to be corrected. Do not use the machinery until the problem is corrected.

Guards may be removed by authorized personnel, under some circumstances, for repair or general maintenance. The machinery should be used only under special supervision in this situation. Guards must always be replaced correctly before you leave the area or when the work is complete.

PROCEDURES (SPECIFIC)

Employees working with machinery which requires guarding should be aware that:

- All guards must be in place when the machinery is operating.
- If the guards are removed for maintenance, the machine should be locked out to prevent another employee from operating the machinery.
- Guards or safety devices should not be bypassed by any means. This defeats the purpose of that guard.

CONFINED SPACE ENTRY

A confined space is any space where, due to its construction, location, contents or work activity:

- A hazardous gas, vapour, dust or fume is likely to accumulate or

- An atmosphere enriched in or deficient in oxygen may occur. Examples of confined spaces include tanks, manholes, sewers, catch basins, chambers and basements.

Historically, confined spaces have produced severe injuries and fatalities when precautions were not taken to protect the safety of the people entering the confined space. For this reason, we must make certain in any work involving confined spaces, that the employees are properly trained and all precautions are taken to make sure the job is done safely.

Your immediate supervisor will be able to identify any areas in your workplace which should be classified as confined spaces. If you are in doubt, check with your immediate supervisor before beginning work.

PROCEDURES (SPECIFIC)

TRAINING (Confined Spaces)

Your supervisor has a responsibility to make you aware of the procedures involved when working in a confined space. He/she also has a responsibility to let you know what the hazards are and what steps to take to eliminate or control the hazards. Make sure you have all these concerns cleared up, before entering the confined space. Your supervisor will instruct you on:

- What the risks are
- What precautions are required (including what personal protective equipment will be required)
- What procedures will be followed to enable the job to be performed safely
- The care and proper use of self-contained breathing apparatus, if necessary.

PRECAUTIONS

Prior to any person entering a confined space, certain precautions must be taken to eliminate or control any risk that may be present. These are listed in your Department's procedures. You shall evaluate the atmosphere of the confined space and record all results. You shall take all the necessary steps to see that the space is free from hazard while the work is being performed. Several methods for entering confined spaces exist within our organization. All are based on departmental job requirements and standard minimum requirements. Consult with your immediate Supervisor for information regarding procedures in your area.

PROCEDURES (SPECIFIC)

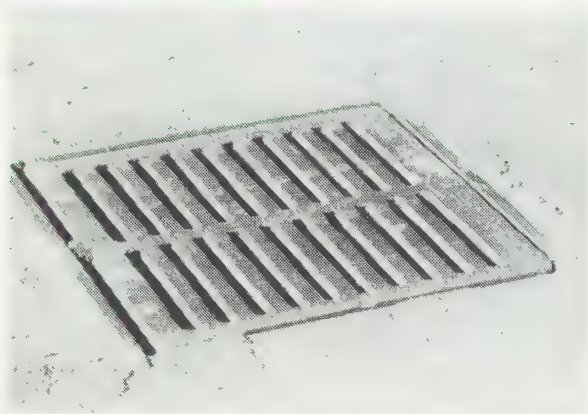
WHAT HAPPENS

IF SOMETHING GOES WRONG?

A person posted outside the confined space has the responsibility to monitor the person working inside. If there are any signs of distress, all reasonable attempts shall be made to remove the worker in the confined space immediately. If this cannot be accomplished safely the outside worker shall alert his/her immediate Supervisor or 911 immediately.

For more information on confined space entries, you should consult:

- written procedures for your specific area
- your Safety Officer at ext. 4176 or ext. 2396



MANUAL LIFTING

SAVE YOUR BACK
THINK BEFORE YOU LIFT.
BACK INJURY CAN BE PREVENTED:
THE BEST PERSON TO PREVENT IT IS YOU.

PROCEDURES (SPECIFIC)

LIFTING TECHNIQUES

Size up the lift

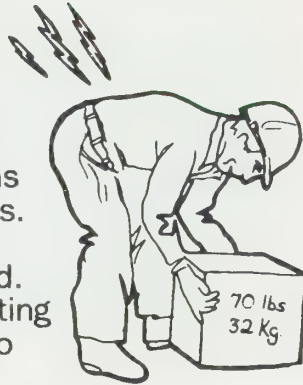
- Too heavy? Too awkward?
- Get help.

Size up the area

- look for obstructions and tripping hazards.
- know where you're going to put the load.
- make sure your footing is solid. Get close to the lift.
- bend knees and hips. The closer the load is to you, the less work your back has to do. (double the distance, double the load).

Lifting

- keep your stomach muscles tight to support your back.



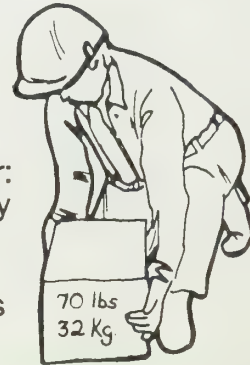
- use your hip and knee muscles to push up the load smoothly.
- keep your balance
- don't lean to the side.
- don't twist.
- turning - use your feet- don't twist your body .

Height

- the safest lifting area is from mid-thigh to shoulder level
- try not to lift above shoulder level

Lifting aids- if lifting aids are available- use them
Remember the weight-lifter:

- can lift two times his body weight
- avoids injury by:
- "warming up" before lifts



PROCEDURES (SPECIFIC)

- Planning the lift
 - keeping the weight close to the body
 - tightening stomach muscles
 - using hip and knee muscles
 - lifting smoothly, "go with the flow"
- Different jobs require different lifting methods. If in doubt, ask your immediate supervisor. IF IN DOUBT, GET HELP!

OFF-THE-JOB SAFETY

All employees are required to work safely. While at work, you learn to take the necessary precautions to maintain your safety on the job. In time, this becomes second nature.

At home, you should take the same precautions. Your safety is equally important there. Don't assume that because you're not in a work environment your safety isn't important. You have the same potential, if not more, to injure yourself at home.



- driving a car
- operating power tools
- using electrical appliances
- climbing ladders
- swimming
- spraying with insecticides
- slipping on wet floors
- getting burns during cooking

PROCEDURES (SPECIFIC)

The result of an injury, no matter where it occurs, can involve time lost from your job.

This hurts you and your family, as well as your employer. If you need more information on how to work safely off the job, your immediate supervisor will be able to help. Also, contact the Safety Section, where resource information is readily available.

Demonstrating good safety habits on and off the job is your responsibility to the employer as well as to yourself and your family.

For other specific procedures relating to your operation, such as traffic controlling, signing, trenching and shoring, etc. Review your Department's Health and Safety Procedures and/or contact your immediate supervisor.



TOXIC SUBSTANCE CONTROL PROGRAM

TOXIC SUBSTANCE



PROGRAM MODULES

Our Toxic Substance Control Program is concerned with the quality of the environment in the workplace. The elements of the Toxic Substance Control Program are designed to help you and your supervisor recognize, evaluate and control any biological, chemical or physical hazards which may be handled or created in your workplace.

WHMIS Symbols For Safety:



TOXIC SUBSTANCE

PROGRAM MODULES



The Toxic Substance Control Program has the following major modules:

- the Workplace Hazardous Materials Information System
- assessing processes and chemicals used in an area, to determine potential hazards.
- monitoring the workplace to determine exposure levels of potential hazards, i.e. dusts, chemicals, noise.
- developing and implementing control measures to reduce hazardous exposures to employees.
- instruction in proper work practices to control or eliminate hazards
- recommending personal protective equipment and providing training materials, covering the use, care and

SOME TOXIC SUBSTANCES

maintenance of this equipment. It is important that the function of each piece of equipment be understood by the person wearing it.

- carrying out special studies and research as requested by supervision.
- maintaining a library of resource material on up-to-date occupational hygiene information.
- working in close liaison with Ministry of Labour inspectors and occupational health personnel to maintain all WHMIS legislative requirements.
- co-operating with Medical Authorities.

PROPERTIES OF HAZARDOUS MATERIALS

Hazardous materials are liquids, gases or dusts which can cause adverse health effects if you are exposed to them.

Exposure to hazardous materials can occur by inhalation, absorption through the skin, or by swallowing (ingestion). Some toxic substances can cause injury to the skin or eyes on contact.

Exposure standards or criteria have been established for the more than 17,000 chemicals which are used to manufacture hazardous materials. These exposure limits represent the level at which about 95% of people may be exposed for forty hours a week for a forty-year working lifetime without any adverse health effects.

PROGRAM MODULES

Some materials also have short term exposure limits based on four 15-minute exposures per day.

Safe work procedures have been developed to limit exposure to hazardous materials. In some cases the safe work procedures will require the use of personal protective equipment to further reduce this potential for exposure.

If your work routinely involves a toxic substance, your immediate supervisor will train you in the safe work procedures and provide you with the appropriate personal protective equipment. It is important that you understand the work procedures and the use of the personal protective equipment.

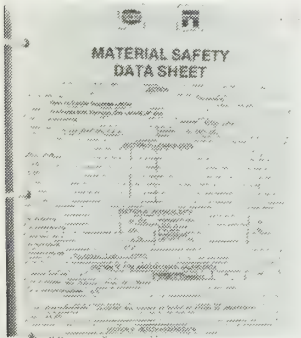
SOME TOXIC SUBSTANCES

Additional W.H.M.I.S. training will be determined by your Joint Health & Safety Committee.

If you have any questions about the materials you are using, the work procedures or the personal protective equipment, talk to your immediate supervisor. When further information

is required, contact your Safety Officer.

The following pages provide some basic information on some of the more common toxic materials found in our operations.



WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

The Workplace Hazardous Materials Information System (WHMIS Regulation 644/88) came into effect on October 31, 1988. WHMIS was designed to protect workers by providing them with vital information about hazardous materials used in the workplace and is the main safety legislation upon which our toxic substance control program is based. WHMIS allows for the transfer of information about hazardous materials from producers, suppliers and importers to employers and, in turn, to employees who use those materials in the workplace.



SOME TOXIC SUBSTANCES

This is done by the following three methods:

- 1) Comprehensive labelling of hazardous materials.
- 2) Provision of Material Safety Data Sheets(MSDS) containing detailed information about the properties of materials, their potential hazards, and ways and means of dealing with such hazards.
- 3) Effective training of workers and supervisors who use these materials in the workplace.

The Safety Section, located in the Human Resources Centre, is equipped to generate computerized workplace labels, upon request, for all Departments.

The employer requires that copies of

MSDS for all WHMIS and non-WHMIS materials (gas, liquid or granular solid) be readily available at each workplace for the information of the workers who use or may be exposed to these various substances.

The WHMIS regulation also requires management to train workers so that they understand the information on the labels and MSDS for the hazardous materials to which they may be exposed. The training program delivered to each employee requiring training is the Workers' Compensation Board Education Authority Program on WHMIS. This program is a one day course which has been endorsed by labour, management and government.

SOME TOXIC SUBSTANCES

Some hazardous materials which may be found in your operations are:

SOLVENTS

- Solvents is a general term applied to many petroleum distillates or mineral spirits.
- Almost all of the petroleum solvents will burn. Check with your supervisor for fire precautions. Inhalation of solvents will cause dizziness, nausea and upset stomach. At high concentrations, they may cause unconsciousness. Skin contact with solvents will cause drying and irritation of the skin.
- Many different solvents are used in our operations. Check with your supervisor to determine the type of solvent that you are using and the precautions required.
- Controlling solvent exposures will require specific precautions for each

type of solvent. Ventilation, safe work practices and personal protective equipment may be used.

- The Ontario Ministry of Labour exposure guidelines for several solvents expressed in milligrams per cubic meter of air are:



Varsol (Mineral Spirits)	575mg/m ³
Naptha	1,350 mg/m ³
Toluene	376 mg/m ³
Kerosene	no established guideline

**SOLVENTS CAN BE HANDLED SAFELY.
SEE YOUR IMMEDIATE SUPERVISOR
FOR MORE INFORMATION.**

TOXIC SUBSTANCE

SOME TOXIC SUBSTANCES

ACIDS

- Some of the acids used are hydrochloric, sulphuric, formic, hydrofluoric and perchloric. In addition, some cleaners and rust removers also contain acid.
- Most acid mists or vapours are odourless. In excessive concentrations, they will cause a choking sensation. Acids react quickly with skin and eye tissue to cause burns. Inhalation will cause irritation of the nose and the throat. High concentrations will produce lung damage.
- Acids are used in many areas for a variety of purposes.

- General precautions for acids are contained in the Material Safety Data Sheets. Specific departmental requirements will be explained by your immediate supervisor.
- The Ministry of Labour exposure guidelines for some acids expressed as milligrams per cubic meter of air are:

Hydrochloric Acid	7.4 mg/m ³
Sulphuric Acid	1.0 mg/m ³
Formic Acid	9.4 mg/m ³
Hydrofluoric Acid	2.0 mg/m ³

ACIDS CAN BE HANDLED SAFELY. SEE YOUR IMMEDIATE SUPERVISOR FOR MORE INFORMATION.

SOME TOXIC SUBSTANCES

CAUSTICS

- Some of the caustics used are sodium hydroxide, peroxide, calcium oxide and ammonium hydroxide. In addition, many cleaners contain caustic materials.
- Most caustic mists are colourless to pale white and odourless. Caustics react with skin and eye tissue causing chemical burns. Inhalation will cause irritation of the nose and throat and a coughing sensation. High concentrations may produce lung damage.
- Caustics are used in many areas for degreasing, cleaning and treating water.
- General precautions for caustics are contained in the Material Safety Data Sheets. Specific departmental requirements will be explained by your immediate supervisor.

- The Ontario Ministry of Labour exposure guidelines for some caustics expressed as milligrams per cubic meter of air are:
Sodium Hydroxide 2.0 mg/m³
Potassium Hydroxide 2.0 mg/m³
Calcium Oxide 1.5 mg/m³
Ammonium Hydroxide not established
- CAUSTICS CAN BE HANDLED SAFELY.
SEE YOUR IMMEDIATE SUPERVISOR
FOR MORE INFORMATION.**

CHLOROTHENE

- Chlorothene, also called Chlorothene NU or methyl chloroform, is a clear yellowish liquid with a distinctive odour.
- Skin or eye contact will cause drying and irritation and may cause chemical burns. Inhalation will cause dizziness, nausea and upset stomach. Long term overexposure may cause liver injury.

SOME TOXIC SUBSTANCES

- Chloroethene is a general degreasing solvent used in many areas. The main advantage of this material is that it is not flammable.
- The most common exposure controls for chloroethene are safe job practices, proper ventilation and use of personal protective equipment. Check with your supervisor for specific precautions in your area.
- The Ontario Ministry of Labour exposure guideline for chloroethene is 350 parts chloroethene per million parts of air averaged over a forty hour workweek (1900 mg/m³).

CHLOROETHENE CAN BE HANDLED SAFELY. SEE YOUR IMMEDIATE SUPERVISOR FOR MORE INFORMATION.

DESIGNATED SUBSTANCES

The Ministry of Labour has developed regulations to control worker exposure to particular hazardous materials. These are known as "Designated Substance Regulations." A designated substance is defined by the Act as a biological, chemical or physical agent or combination of agents for which a regulation has been made to prohibit, regulate, restrict, limit or control worker exposure. At present, each designated substance regulation applies to a single agent or class of agents and sets out requirements governing exposure limits, use of respirators, air monitoring, medical surveillance and record keeping. In the future, as control strategies are reviewed, regulations may

SOME TOXIC SUBSTANCES

apply to broad groups of substances and may not contain all the features of existing designated substance regulations.

- As of October 1988, there were several designated substance regulations in Ontario:

1. acrylonitrile
2. arsenic
3. asbestos
4. benzene
5. coke oven emissions
6. ethylene oxide
7. isocyanates
8. lead
9. mercury
10. silica
11. vinyl chloride

Listed on the following pages is a brief description of some of the designated

substances which may be found in your Department.

ASBESTOS

- Asbestos is a fibrous material which has been used as insulation material for heat applications.
- Long term overexposure to airborne asbestos fibres can cause asbestosis, a fibrotic lung disease. Increased risks for lung cancer, cancer of the digestive tract and mesothelioma (cancer of the tissues lining the chest and abdominal cavities) can be caused by long term overexposure.
- Asbestos has been used in the past for building and pipe insulation. Its present uses are limited to pump packings, gaskets and friction products such as brake shoes.



SOME TOXIC SUBSTANCES

- "Procedure for Removal and Handling of Asbestos Waste Material" has been developed under the Occupational Health and Safety Act.
- The Ontario Ministry of Labour has prescribed asbestos as a "designated substance" to which employee exposure must be limited to a level not exceeding 0.5 fibres per cubic centimetre of air averaged over a forty hour workweek.

**ASBESTOS CAN BE HANDLED SAFELY.
SEE YOUR IMMEDIATE SUPERVISOR
FOR MORE INFORMATION IF YOU
SUSPECT THAT YOU ARE EXPOSED TO
ASBESTOS.**

SILICA

- Silica is a natural compound and may be present in an amorphous or crystalline form or may be bound as a silicate. It is the crystalline form that is hazardous. The most common form of free crystalline silica is quartz.
- Long-term overexposure to crystalline silica can cause silicosis, a fibrotic lung disease. Early symptoms include shortness of breath upon exertion and a dry cough.
- Crystalline silica is present in a number of refractory brick, insulation or sand materials.
- Safe procedures have been established for those jobs routinely handling materials containing crystalline silica (sandblasting and also water filtration)



SOME TOXIC SUBSTANCES

- The Ontario Ministry of Labour has regulated crystalline silica as a "designated substance" to which employee exposure must be limited to less than 0.1 milligrams of silica per cubic meter of air averaged over a forty hour workweek.

**SILICA CAN BE HANDLED SAFELY.
SEE YOUR IMMEDIATE SUPERVISOR
FOR MORE INFORMATION.**

LEAD

- Lead is found in two basic forms; liquid organic lead and solid inorganic lead. Lead is a silvery-grey, heavy, ductile metal which melts at temperatures greater than 330°C.



- Lead is a cumulative poison which is stored in the soft tissues and bones upon absorption. Since elimination of lead from the body is slow, intake of small amounts over a period of time can build up in the body. Long term overexposure to lead can cause effects in the central nervous system, nerve conduction, kidney and blood forming organs.
- Materials which contain lead are: babbitt metals, white lead lubricants, lead intercell connectors, plastic lead seal #2 and some lead pigmented paints, and sewage or sewage by-products.
 - Ventilation, safe work procedures and personal protective equipment are required for jobs with potential lead exposure.

SOME TOXIC SUBSTANCES

- The Ontario Ministry of Labour has regulated lead as a designated substance to which employee exposure must be limited to less than 0.15 milligrams of lead per cubic meter of air averaged over a forty hour workweek.

LEAD CAN BE HANDLED SAFELY. SEE YOUR IMMEDIATE SUPERVISOR FOR MORE INFORMATION.

MERCURY



- Mercury is a silvery, heavy liquid metal. Mercury has a high vapour pressure such that even at normal temperatures airborne mercury vapour can be given off above mercury exposed to the air.
- Mercury vapour can be inhaled, ingested or absorbed through skin contact. Short term exposures to high levels results in irritation to the lungs, swelling of the

gums and stomach cramps. Long term overexposures cause loss of appetite, insomnia, irritability and tremors of the hands and face.

- Mercury is used in some electrical switching mechanisms, as a manometer fluid and certain mercury compounds are used for chemical analyses. Mercury handling and spill clean-up procedures have been established for the departments routinely using mercury.
- The Ontario Ministry of Labour has regulated mercury as a designated substance to which employee exposure must be limited to less than 0.05 milligrams of mercury per cubic meter of air averaged over a forty hour workweek.

MERCURY CAN BE HANDLED SAFELY. SEE YOUR IMMEDIATE SUPERVISOR FOR MORE INFORMATION.

SOME TOXIC SUBSTANCES

BENZENE

- Benzene is a clear, colourless, highly flammable liquid having a pleasant odour at low concentrations.
- Benzene exposure can occur by inhalation and, to a lesser extent, by skin absorption. Short-term exposure will cause dizziness, headache, nausea and fainting. Long-term overexposure will affect the blood forming organs and may increase the risk of developing leukemia.
- Benzene is a constituent of some light oils. Benzene can also be a trace component of some commercial solvents, paints and glues.



- The Ontario Ministry of Labour exposure guideline for benzene is 1.0 parts of benzene per million parts of air averaged over a forty hour workweek.
**BENZENE CAN BE HANDLED SAFELY.
SEE YOUR IMMEDIATE SUPERVISOR
FOR MORE INFORMATION.**

PHYSICAL AGENTS

Currently the only hazardous physical agent which has been designated by the ministry are x-rays. In the future, as control strategies are reviewed, regulations may apply to other hazard groups such as heat stress, cold stress, noise and vibration. These groups are more commonly known as physical agents.

SOME TOXIC SUBSTANCES

NOISE

Noise is present in many of our workplaces. Constant exposure to high noise levels over a period of many years can damage our hearing. Once this permanent damage has occurred, it can not be reversed. Therefore, it is important to take the necessary precautions now, before damage occurs.

Noise has been regulated by the Ministry of Labour under the Designated Substance Regulations.

A high noise area is an area where noise levels are in excess of 85 dBA. You can test this yourself easily. If you have to shout to be heard at a distance of three feet or less, then you are in a high noise area. Talk to your immediate Supervisor to determine if hearing protection is required for your work area.

CONTROLS

Ideally, noise should be controlled at its source. Some examples are:

- Enclosures around noisy pieces of machinery.
- Mufflers on intakes and exhausts surrounding noise sources.
- Changes to equipment design to reduce noise levels.

Controls, however, are not always available. Where noise can't be controlled at the source, hearing protection must be worn.

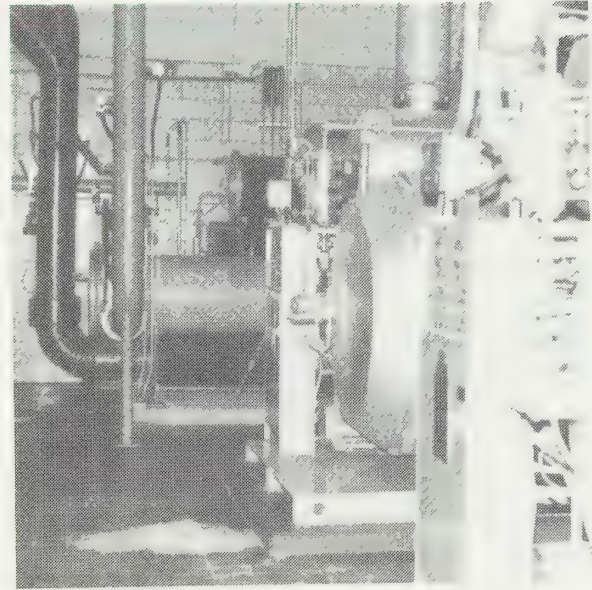
You will be instructed on:

- Why hearing protection is needed.
- Types of protection that are available.
- Methods of correctly wearing protection.
- Maintenance and care of the protection.

SOMETIMES AFTER A DAY AT WORK, I FIND IT HARD TO HEAR CERTAIN THINGS, ESPECIALLY HIGHER TONES.

SOME TOXIC SUBSTANCES

BY THE FOLLOWING MORNING EVERYTHING IS BACK TO NORMAL. SHOULD I BE CONCERNED? This is normal after exposure to high noise for up to eight hours. Your hearing mechanism is experiencing "temporary threshold shift" or a temporary fatigue. This problem will disappear in a matter of hours. Make your immediate Supervisor aware that you are being affected by noise levels in your area. Steps will be initiated to have the area evaluated for noise levels and implement engineering controls or hearing protection to reduce your exposure to noise.



TOXIC SUBSTANCE

SOME TOXIC SUBSTANCES

HAZARDOUS BI- PRODUCTS

CARBON MONOXIDE

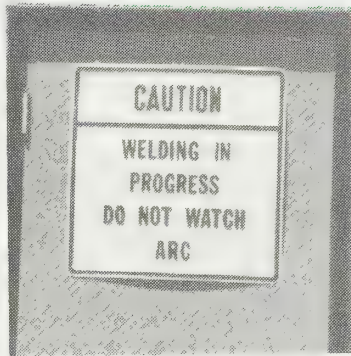
- Carbon Monoxide is a clear, colourless, odourless gas which is generated from incomplete combustion of fuels.
- Inhaled carbon monoxide combines with the blood about 200 times more readily than oxygen. The carbon monoxide combines with the blood and takes the place of the oxygen which is required by the body. Exposures to moderate levels of carbon monoxide will cause headaches, nausea and drowsiness. Even short exposures to high levels may cause convulsions and death.
- Carbon monoxide is generated by gasoline and, to a lesser extent, diesel and propane engines.

Specific departmental requirements will be explained by your immediate Supervisor.

- The Ontario Ministry of Labour exposure guideline for carbon monoxide is 35 parts of carbon monoxide per million parts of air averaged over a forty hour workweek.
- The short term exposure guideline for carbon monoxide is 440ppm. The exposure shall not:
 - exceed 15 minutes at any one time.
 - occur more than four times per day.
 - occur until at least one hour has elapsed since the previous exposure.

CARBON MONOXIDE CAN BE HANDLED SAFELY. SEE YOUR IMMEDIATE SUPERVISOR FOR MORE INFORMATION.

SOME TOXIC SUBSTANCES



WELDING FUMES MILD STEELS

- Welding fumes are the very finely divided dusts liberated from the base metal and welding electrode. Mild steel welding will release mainly iron oxides. Welding galvanized material will release zinc oxide fumes. Brazing will also release zinc oxide.
- Inhalation of welding fumes will cause irritation of the nose and throat. Long term overexposure to welding fumes will cause changes in the lungs that can be detected by X-Ray. Inhalation of zinc oxide fumes and brass and copper may cause delayed flu-like symptoms, fever and chills.
- Welding fumes are generated from the extreme heat and energy used in making the weld. The energy is enough to vapourize some of the metal.

SOME TOXIC SUBSTANCES

The fumes generated are very small and easily inhaled into the lungs. Coatings or paints will also be vapourized.

- Various exposure control methods are used in different areas. These include ventilation, safe work practices and use of personal protective equipment.
- The Ontario Ministry of Labour guidelines for compounds released during stainless steel welding expressed in milligrams per cubic meter of air are:

Nickel and Nickel Oxide 1.00 mg/m ³
Chromates 0.05 mg/m ³
Chromium Metal 0.50 mg/m ³

This list is by no means complete. An inventory list of all material used in your department is available. Please consult your immediate supervisor for such information.

STAINLESS STEEL

- Stainless steel welding will release mainly chromium and nickel compounds.
- Inhalation of welding fumes will cause irritation of the nose and throat. Long term exposures to some chromium and nickel compounds has been associated with increased risk of lung cancer.
- Energy and heat used for welding is enough to vapourize metals. The fumes generated are very small and easily inhaled into the lungs. Coatings or paints will also be vapourized.
- Stainless steel welding is carried out in a limited number of areas. Exposure control methods include local exhaust ventilation, safe work practices and use of personal protective equipment.

HAZARDS AND CONTROL

CONTROL OF HAZARDS

SKIN EFFECTS

- Overexposure to some chemicals in the workplace can cause skin effects or dermatitis.
- The two main types of dermatitis are:
 - irritation dermatitis
 - sensitization dermatitis
- Anyone can get irritation dermatitis from abrasion, heat, cold, continual exposure to moisture or from acids or alkalies. In most cases, it goes away with removal of the irritant.
- Sensitization dermatitis is due to an allergic reaction to a chemical. Once a person is sensitized it only takes a very small amount of material to cause a reaction. Sensitizers may include some plastics, soaps, tars or even foods.
- To reduce the chance of getting dermatitis:

- Never use solvents or line chemicals to clean your hands or clothing. Use hand soap or cleaners.
- Launder contaminated clothing or gloves regularly.
- Don't put contaminated gloves in your pocket.
- Wear the proper protective clothing required by the job to prevent dermatitis and absorption. Check your Material Safety Data Sheets or speak to your Supervisor. REMEMBER-IF YOU HAVE ANY DOUBTS ABOUT HOW A CHEMICAL MIGHT AFFECT YOUR SKIN, TALK TO YOUR IMMEDIATE SUPERVISOR.

HAZARDS AND CONTROL

RESPIRATORS

A respirator is a piece of personal protective equipment designed to protect you from inhaling harmful substances. You will be asked to wear a respirator when an actual or potential inhalation hazard is present and cannot be mechanically eliminated.

Under normal conditions, sources of unclean air are controlled through engineering controls, material substitution or work practices. However, when this is not sufficient to ensure your complete safety from hazards, respirators will be provided and must be worn. There are two types of respirators:

- air-supplied respirators
- air purifying respirators.

AIR-SUPPLIED RESPIRATORS

Are used when the atmosphere lacks sufficient oxygen or contains a toxic gas such as carbon monoxide, H₂S, Chlorine, or other toxic gases.

- supply clean air from a self-contained breathing apparatus or an air-line.
- require formal training and certification before they may be worn. The training includes:
 - how to don the respirator properly.
 - how to perform checks for proper operation (performance) before equipment is worn.
 - how to ensure proper fit through negative and positive pressure tests.
 - how to inspect, maintain and store equipment.

HAZARDS AND CONTROL

- Require recertification of user every two years (or as required by your department).
- Are provided by your immediate supervisor appropriate for the job to be performed.

AIR-PURIFYING RESPIRATORS

- Are used to filter out contaminants from the air as you breathe.
- Are selected to suit the nature of contaminant to be filtered.
 - metal fume cartridge
 - dust or mist cartridge
 - chemical cartridge
- have their fit affected by:
 - long hair, beards
 - glasses
 - unusual facial structure.



If you are having any difficulties with the fit, ask your immediate supervisor so the problem can be resolved through custom fitting or adjustments.

- must be worn properly. The respirator should fit over the mouth and nose. The elastic straps fasten behind the crown of the head and behind the neck, (under a hard hat if required). Check for a proper fit by covering the exhalation valve with your hand. Exhale. If there is a leak, you will feel air on your face. Readjust the facepiece and repeat test.
- Must be cleaned regularly and stored in a clean location. You will receive training on the methods of proper cleaning of this equipment.

NOTE: Proper face seal is required for all respirators, air supplied or air purifying cartridge.

CONTROL OF HAZARDS

HEARING PROTECTION

There are four basic types of hearing protection available.

- a) Foam Ear Plugs are the most comfortable and provide the best overall hearing protection. When properly inserted, they provide a good seal within the ear.
- b) MSA EAR PLUGS are available in four sizes. They provide good protection, but because they do not mold to the shape of the ear, some leakage of sound occurs.
- c) SOUND BANDS have adjustable ear pads and head bands. The noise reduction is less than with plugs. Their efficiency can be lessened by a shifting of the band on the head.

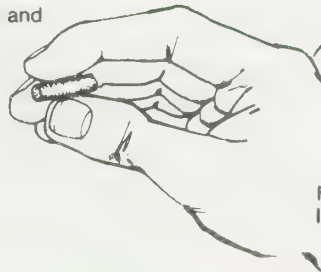
- d) EAR MUFFS fit over the ear. For this reason, the fit can be hampered by long hair; safety glasses; lack of tension in the head band; and bending of the band to stop pressure on the temple area.
- DIFFERENT DEPARTMENTS PROVIDE DIFFERENT STYLES OF HEARING PROTECTION SUITABLE FOR THE WORK AREA. NOT ALL TYPES OF PROTECTION MAY BE SUITABLE FOR YOUR AREA. CHECK WITH YOUR IMMEDIATE SUPERVISOR. YOU WILL HAVE THE MOST COMFORTABLE TYPE OF PROTECTION AVAILABLE.**

CONTROL OF HAZARDS

WHAT IS THE PROPER WAY TO INSERT A FOAM PLUG?

- 1) Clean hands prior to use.
- 2) Slowly roll and compress one plug uniformly with your thumb and forefinger into as small a diameter as possible.
- 3) Pull backwards and upwards on the ear with the hand opposite the ear that is being fitted and insert the plug well into the ear canal while continuing to roll and compress the plug.
- 4) After inserting the plug, hold the plug gently in place with the finger tip until expansion is complete (approximately 30 to 60 seconds).

Figure 1 — Roll and compress plug.



- 5) A properly inserted plug does not expand out of the ear canal.
- 6) Repeat with the other ear.

Figure 2 — Pull backwards and upwards on the ear for insertion.

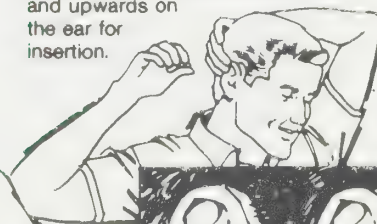


Figure 3 — Insertion





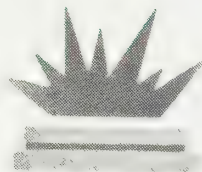
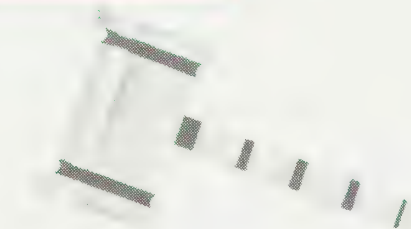
THE OCCUPATIONAL HEALTH AND SAFETY ACT

OCCUPATIONAL HEALTH
& SAFETY ACT



DEFINITIONS AND APPLICATIONS

- The Occupational Health and Safety Act was passed in Ontario in 1978 and came into effect on October 1, 1979.
- The Act and its supporting regulations are administered and enforced by inspectors of the Ministry of Labour.
- Detailed regulations have been written for industrial establishments and construction projects, both of which involve our operations.
- The Act and Regulations apply to all workplaces in Ontario except private residences and farming operations.
- The Act and Regulations cover all employees, and employees are subject to all duties, responsibilities, protection and penalties.



- Certain exemptions apply with respect to work refusals and requirements for committees.

CHECK WITH YOUR IMMEDIATE SUPERVISOR FOR DETAILS REGARDING YOUR OPERATION.

EMPLOYEE PARTICIPATION UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT

- The employer believes that any successful occupational health and safety program must have the full participation of all employees.
- The Occupational Health and Safety Act also recognizes that employees must be given the opportunity to participate in Occupational Health and Safety Programs.
- Participation by employees includes:
 - Taking time to inspect your immediate workplace for danger or hazards to yourself or others.
 - Reporting hazards and making recommendations to improve health and safety in the workplace.
 - Recommending new programs, measures or procedures for health and safety
 - Obtaining information on potential or existing hazardous materials, processes or equipment.
 - Participating in accident investigations where you can help identify a cause or solution.
 - Expressing any health or safety concerns immediately to supervision through safety meetings and personal safety contacts.
 - employees have long been important participants in our Safety and Occupational Health Programs.
 - It is up to all employees and supervisors to see that we continue to participate fully in our Programs.

WORK REFUSALS

WORK REFUSALS UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT

It is a safety program requirement that no employee do any work that is likely to endanger the employee. The same requirement is contained in the Occupational Health and Safety Act.

- If you have reason to believe that any equipment you are about to use, or the physical condition of the workplace is likely to endanger you or a fellow employee, stop doing the work immediately and take reasonable measures to remove the hazard.
- If you cannot reasonably remove the hazard yourself, contact your immediate supervisor as soon as possible.

- It is your immediate supervisor's responsibility to thoroughly investigate the situation with you present, if you wish to be present.
- The immediate supervisor must then take steps to deal with the circumstances and satisfy your concerns.
- If you are satisfied, you can return to work.
- If you are not satisfied, and you have reasonable grounds to believe that the work continues to be likely to endanger you or another employee, your supervisor must review the circumstances with senior department supervision and the Safety Department.

WORK REFUSALS

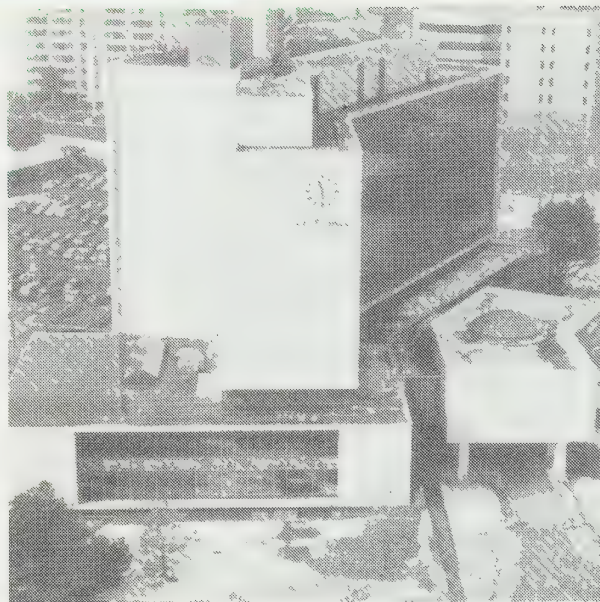
- If you are still not satisfied, supervision may call the Ministry of Labour inspector for his/her opinion. The inspector's decision is final.
- We have found that employees and supervision have generally successfully resolved any concern.
- Pending an investigation of the circumstances, another employee can do the work if this employee has been informed that there has been a work refusal and the reasons, and if the employee and the supervisor are satisfied that the work is safe.
- As a municipal employee, it is your responsibility to not do work you sincerely believe is likely to endanger you or another person.
- You therefore will not be subject to any penalty or discipline for sincerely carrying out this responsibility.
- You should feel free to discuss these responsibilities further with your immediate supervisor.

MINISTRY OF LABOUR INSPECTIONS

- The Ministry of Labour head office in Toronto prepares new regulations and procedures and administers the Occupational Health and Safety Act.
- Ministry of Labour also has a regional office in Hamilton.
- Ministry of Labour inspectors from the regional office visit our facilities on several occasions to discuss programs and inspect departments.
- The inspectors inspect each work location about once or twice a year.
- We have found that the Ministry of Labour inspectors are competent and have a lot of experience.
- The inspector is usually accompanied on his inspection by one or two of our safety committee members.
- During the inspection, the inspector examines the workplace for compliance with the Occupational Health and Safety Act. If there are any concerns, the Inspector will ask if you have discussed these concerns with your immediate supervisor. You should feel comfortable discussing our program with him/her.
- If anyone is not following departmental safety procedures, or if procedures do not comply with the Occupational Health and Safety Act and Regulations, the inspector may write a "compliance order".
- These compliance orders require that we take steps to fix the problem or enforce the safety rules as soon as reasonable.

MINISTER OR LABOUR INSPECTIONS

- In some extreme cases, the inspector can order that we stop doing particular work.
- In very rare cases, usually following a serious accident, the inspector may conduct an investigation. This may involve questioning of employees
- If you are involved in such an investigation, please answer all questions to the best of your ability. Someone from the Safety Department, or your safety committee, will also be there to help if you have any concerns. The most important thing to remember is that the Ministry of Labour inspector wants to prevent future accidents just as we do. We should help the inspector when asked.



OFFENSES AND PENALTIES

Like any other law enforced by our government, there are penalties under the Occupational Health and Safety Act when the law is broken. These penalties can be assessed against companies, supervisors or employees.

- The Ministry of Labour, however, recognizes that when a section of the OHSA or regulations or a rule is broken, it is usually due to a misunderstanding and is not intentional.
- For this reason, charges and penalties are extremely rare. The inspector instead usually gives a stern warning or issues a "compliance order" to correct the problem.
- If charges are made under the OHSA and the supervisor or employee charged is found guilty before a judge the penalties can be a fine of up to \$25,000

or imprisonment of not more than one year. **(Currently under review)**

- Up to 1984, charges in Ontario against people have been very rare and usually only where the Ministry of Labour believes gross negligence was involved. Fines have been relatively small and there have been no cases of imprisonment. This trend has changed drastically.
- If our employees were ever involved in a charge under the OHSA, the employer would work closely with the supervisor or employee to help ensure that the issue is handled fairly.
- As long as we continue to do our jobs as well as we can, it is very unlikely we will be involved with charges. If you have any questions, speak to your supervisor or call your safety Officer at 546-4176.

INDUSTRIAL REGULATIONS

The Industrial Regulations apply to all industrial establishments in Ontario. This includes essentially all manufacturing operations except mining and construction. The Regulations are contained in the back of the same book that contains the Occupational Health and Safety Act.

- The Industrial Regulations cover all our work locations and areas, but not major construction projects.
- The requirements of the Industrial Regulations are incorporated in the:
 1. The Employer's Safety Handbook.
 2. The Employer's Health and Safety Policy.
 3. Departmental Safety Rules (if applicable.)

- You are welcome to review the Occupational Health and Safety Act and Regulations. Your supervisor has posted a copy that he/she can discuss with you. Remember, however, that the Act was not meant to be used as a safety manual or safety procedure.

CONTENTS

The Industrial Regulations include information on:

PART I - SAFETY REGULATIONS

- notice of accidents -
- premises - this section covers the facilities including buildings and walkways.
- regular and emergency lighting.
- fire prevention and handling flammable liquids.

INDUSTRIAL REGULATIONS

- guards, tools and lockouts.
- material handling, lifting and storage and mobile equipment.
- entry into confined spaces.
- maintenance and repairs.
- personal protective equipment.
- molten metal.
- logging.

PART II-BUILDINGS

- the Building Code also applies.
- fire escapes.

PART III-INDUSTRIAL HYGIENE

- eyewash and showers in chemical operations.
- ventilation and replacement air.
- temperature.
- training in the use of chemicals.
- noise.
- chemical exposure.

If you have any questions, please speak to your immediate supervisor.

CONSTRUCTION REGULATIONS

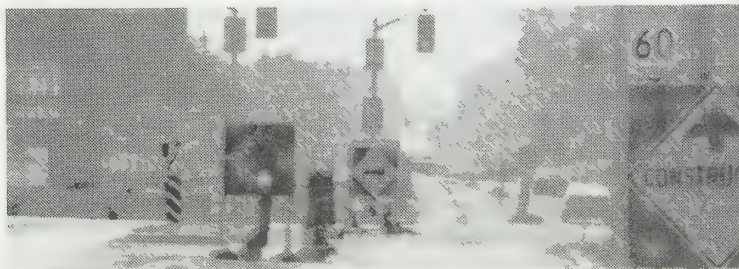
The Construction Regulations apply on projects whether undertaken by contractors, or by our Departments.

The Construction Regulations include sections on:

- Administration
- General Construction
 - Public Way Protection
 - Traffic Control
 - Personal Protective Clothing,
 - Equipment and Devices
 - Access to and Egress from Work Areas
 - Housekeeping
 - Storage of Materials
 - Excavations
 - Guardrails
 - Forms and Falsework
 - Platforms, Runways and Ramps
 - Stairs and Landings
 - Ladders
 - Scaffolds and Working Platforms
 - Hygiene
 - Fire Protection
 - Cutting and Welding
 - Electrical Hazards
 - Temporary Heat -Explosives
 - Confined Space
 - Equipment, General
 - Explosive Actuated Tools
 - Fastening Tools
 - Cranes and Hoisting
 - Roofing
 - Damaged Structures
 - Demolition
- Trenching
- Tunnels and Shafts

CONSTRUCTION REGULATIONS

- Fire Protection
 - First Aid
 - Rescue of Workers
 - Communications
 - Lighting and Electricity Supply
 - Shafts
 - Hoisting
 - Tunnels
 - Tunnel Equipment
 - Explosives
 - Ventilation
- Work in Compressed Air
 - Fire Prevention
 - Lighting
 - Sanitation
 - Medical Requirements
 - Compressors for Air Supply
 - Air Locks and Working Chambers
 - Working Periods and Rest Periods
 - Duties of Lock Tenders
 - Decompression Procedures



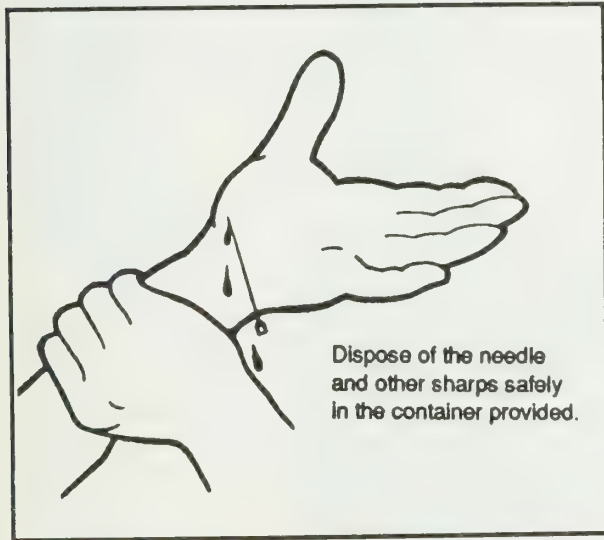


OTHER POINTS OF INTEREST



THE INJURED EMPLOYEE

Should an injury occur while you are on the job, you will be given prompt and suitable medical attention.



If you receive an injury, you should:

- report it to your supervisor immediately (if possible).
- seek medical attention as soon as possible.

If another employee is injured, you should:

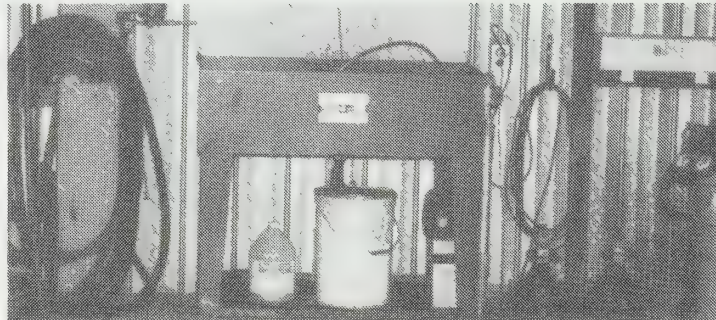
- notify supervision immediately, if possible.
- do not move the employee from the accident scene unless the physical site poses some danger.
- co-operate in every way possible to make the situation easier on all involved. You should only apply first aid when the life of the injured employee is in jeopardy. This would include:
- when the person is not breathing - give cardiopulmonary resuscitation, if you

THE INJURED EMPLOYEE

are properly trained to give it, until breathing resumes normally.

- when bleeding is evident - apply pressure to the wound to contain the bleeding.
- in the event of an acid spill - remove the contaminated clothing and flush the area with lots of clear water.
- flush burns with cold water to avoid blistering.

Do not contact the relatives of the injured employee yourself. Your Senior Management should have a process in place which will be able to provide the family with details on the nature of the accident and the extent and severity of the injury.



FIRE PROTECTION



Everyone of us has a responsibility to know about the equipment provided for fire protection and what we must do toward preventing a fire.

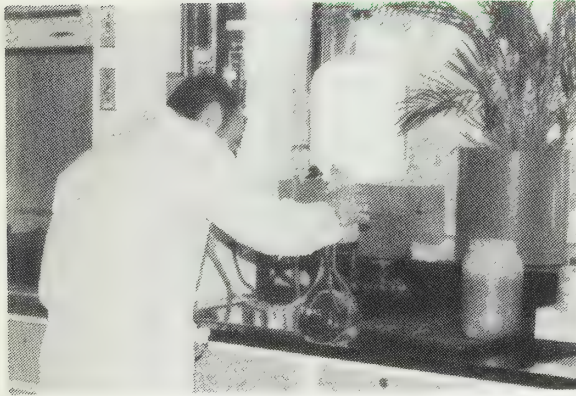
To protect against fires, each employee should:

- be familiar with the location and operation of fire fighting equipment in your area and the fires on which they can be used.
- see that fire fighting equipment is in good condition and operational. All defects should be reported immediately.
- know location of fire alarms
- observe good housekeeping rules. Keep aisles and exits clear at all times.
- keep fire doors operative and unobstructed.
- keep doors of stairways closed.
- see that sprinkler systems are free from obstruction. They should have a 36 inch clearance.
- use, store and handle flammable and hazardous materials correctly and safely.

FIRE PROTECTION

- be aware of possible sources of hazards and take the necessary precautions.
 - report hazardous conditions and fires immediately to your supervisor.
 - be familiar and trained in your role in any plan established for emergency and evacuation procedures.
 - observe no smoking signs and rules
 - use fire fighting equipment for fire fighting only in the event of a fire.
 - REMAIN CALM.
 - notify occupants of area and alert supervision of fire immediately. In the event of fire follow local departmental emergency plan OR:
 - call 911 to report the fire and give:
 - your name
 - your department
 - telephone extension
 - exact location of fire
 - nature of fire
 - use the fire fighting equipment available to put out the fire, if possible, without risk to yourself.
 - seek assistance
 - follow instructions from supervision.
 - use fire blanket, coat, emergency shower or rolling on ground to extinguish a fire to clothing.
 - report the accident immediately to your supervisor who will investigate.
- If you have any questions on fire protection in your department talk to your supervisor.
- Training on the use and care of fire extinguishers is available from the Fire Department. Talk to your immediate supervisor and training can be arranged with the Training Supervisor.

OFFICE SAFETY



ACCIDENTS DO HAPPEN IN THE WHITE COLLAR WORLD

To most people, the office does not seem like a hazardous workplace, especially when compared to potentially dangerous workplaces such as a mine or a foundry.

Slips, falls, paper cuts and stumbles on carpets do not elicit the painful images associated with accidents in heavy industry. But an increasing number of our office workers are aware that tragic and debilitating accidents can and do take place in the office. They know that a broken leg, whether suffered in an office fall or an assembly line accident is just as destructive and painful to the victim.

Of course, the number of serious accidents occurring in the office workplace does not compare with those suffered in other more hazardous occupations. But, as more people become safety-conscious an orientation towards eliminating workplace hazards grows. The office is a hazardous workplace and one where there is room to improve safety-consciousness.

OFFICE SAFETY

TIPS ON KEEPING THE OFFICE SAFE

FLOOR SURFACES - It is essential to clear floor surfaces of anything that could cause a fall (such as spilled coffee, pens, erasers, water from winter boots). Almost any object is capable of causing a fall when an unsuspecting person steps on or in it. Make sure wires do not snake dangerously across floor surfaces. Install a new outlet if necessary.

Worn spots in carpets, chipped or broken tile and linoleum, and any other damage to the floor itself also poses a hazard. It's easy for shoes or chair casters to catch on damaged floor surfaces.

CHAIRS - Most chair falls occur when a person is moving in his or her chair. Since many office chairs have casters, moving in them can lead to the chair getting away

from the person in it. When chairs are purchased for an office, make sure the casters are properly suited to the office floor surface.

STAIRS - The safety rules for all floor surfaces also apply to stairs. A pen or pencil on the stairs can lead to a disastrous fall. Caution should always be exercised when using the stairs.

REACHING - Never use a makeshift ladder to get to hard-to-reach shelves and other high places. For example, piling a box on top of a chair with casters can be dangerous. If your workplace has high shelves, make sure it also has a step ladder.

LIFTING - Moving heavy objects the wrong way is one of the major causes of strains, sprains and lower back pains, and typewriters, cartons or other office

OFFICE SAFETY

objects can be surprisingly heavy. When lifting a heavy object, it's best to get help. But if you must lift it, here are some precautions to take: 1) position your feet for balance - place one foot slightly ahead of the other, about shoulder width apart; 2) bend your knees and keep your back as straight as possible; 3) keep your arms and the object close to your body at waist level; and 4) turn from the feet, or point your forward foot in the direction of the turn.

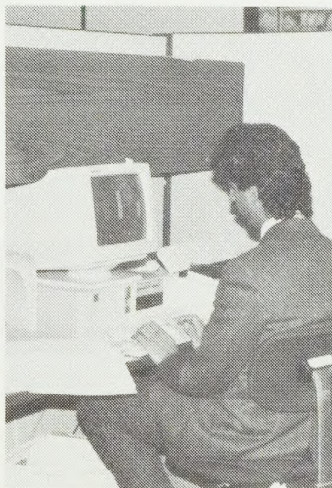
EQUIPMENT - Don't try to repair damaged or malfunctioning office equipment yourself. If something is wrong, turn off the equipment and let an expert fix it. Be aware of what type of chemicals are involved in the use of equipment such as copiers and printers and take the necessary precautions when using these chemicals. Remember that long hair, jewelry, fingers and loose clothing can

easily get caught in operating machines.

FIRE - The caution exercised at home to avoid fires should also be used in the office. For example, caution must be used around office equipment and chemicals,

which may be flammable. Storage rooms, with piles of paper, can also be hazardous. And all employees should know the fire instructions and procedures pertaining to their workplace.

If you have any questions regarding your operation, consult your immediate supervisor.

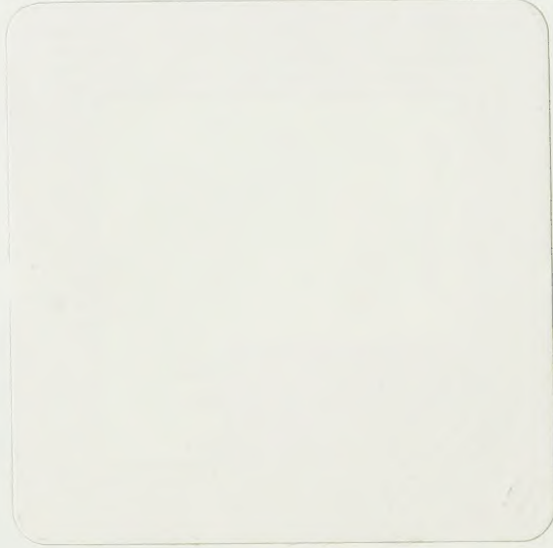


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GOVERNMENT DOCUMENTS

NOTES





EMERGENCY TELEPHONE NUMBERS

Health and Safety Section..... 546-4176

546-2396

546-4336

Ministry of Labour (Industrial)..... 521-7736

(Construction)..... 521-7746

EMERGENCY..... 911

- Fire

- Ambulance

- Police

Health & Safety Committee Member_____

Immediate Supervisor_____

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